

REMARKS

The Examiner is thanked for the thorough examination of the application. It is believed that no new matter is added to the application by this Amendment.

Status Of The Claims

Claims 1-21 are pending in the application. Claim 21 corresponds to claim 1 and finds additional support in Figures 5-7 of the application.

Issues Under 35 U.S.C. §103(a)

In response to the Appeal Brief filed January 17, 2006, the Examiner has re-opened prosecution on the merits and issued the following rejections:

1. Claims 1-5, 7, 9 and 10 under 35 U.S.C. §103(a) as being unpatentable over Nagakubo (U.S. Patent 6,219,117) in view of Matsumoto (U.S. Patent 5,649,754).
2. Claims 6 and 8 under 35 U.S.C. §103(a) as being unpatentable over Nagakubo in view of Matsumoto and Mashino (U.S. Patent 5,886,759).
3. Claims 11-20 under 35 U.S.C. §103(a) as being unpatentable over Suga (U.S. Patent 6,425,673) in view of Matsumoto and Nagakubo.

Applicant respectfully traverses.

The present invention pertains to a back light for a liquid crystal display device that utilizes a novel reflector that includes colorless ink containing a light scattering agent. Independent claims 1 and 11 of the invention recite an optical component that "includes a

printing portion made of colorless ink containing a light scattering agent.” Similarly, independent claims 3 and 12 contain the limitation: “a printing portion made of colorless ink containing a light scattering agent.” That is, independent claims 1, 3, 11 and 12 of the invention recite “colorless ink containing a light scattering agent.” Claim 21 of the present invention also recites “a printing portion made of colorless ink containing a light scattering agent” and additionally sets forth that the printing portion has a convex and concave surface topology.

Distinctions of the present invention over Nagakubo, Mashino and Suga have been placed before the Examiner, most recently in the Appeal Brief, filed January 17, 2006. For brevity, these distinctions are not repeated here. In summary, Nagakubo Mashino and Suga (alone or in combination) fail to disclose or suggest “a printing portion made of colorless ink containing a light scattering agent.”

At page 4 of the Office Action the Examiner turns to Matsumoto and refers to Figure 3(B), which is reproduced below.

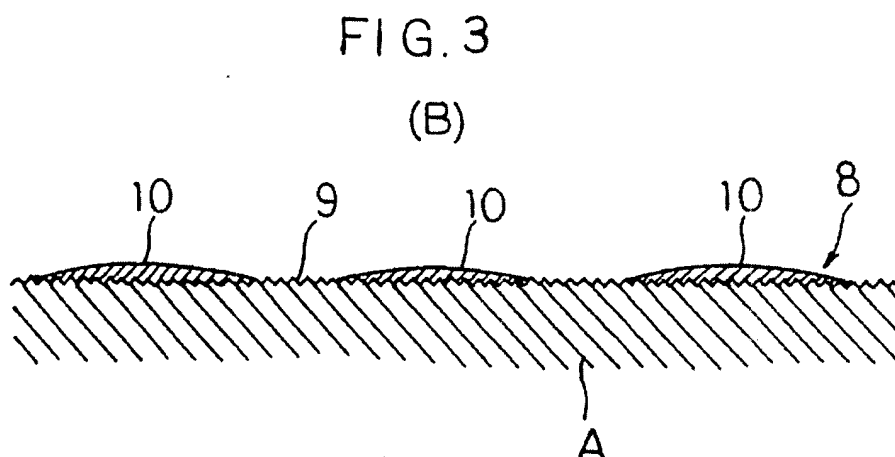


Figure 3(B) of Matsumoto shows an acrylic plate A with a diffusing plane 8 with transparent ink applied to irregular reflector regions 10. At column 6, lines 43-45 Matsumoto

states: "The transparent ink produces the same effect as water adhering to ground glass, to reduce irregular reflection from the rugged surface." That is, Matsumoto uses transparent ink to reduce light scattering. As a result, Matsumoto teaches away from the present invention.

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). A *prima facie* case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the invention. *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997).

At page 4, lines 8-9 of the Office Action, the Examiner asserts that Matsumoto at column 6, lines 29-65 discloses "mixing an irregularly reflecting additive (or light scattering agent) into the transparent ink." However, this passage of Matsumoto fails to disclose a light scattering agent. Instead, Matsumoto uses silk screen printing to induce surface roughness that manipulates surface reflection properties. This passage from column 6, lines 29-65 Matsumoto is reproduced below:

In fact, what is known as a diffuser plate or diffuser sheet having such a rugged surface already formed is commercially available also. Such a product may be used instead.

Next, as shown in FIG. 3(B), an acrylic transparent ink is applied by silk screen printing technique to portions of the rugged surface for forming the modified irregular reflector regions 10. This ink forms deposits to limit irregular reflection. The ship-shape patterns shown in FIG. 2 are left free of the ink deposits.

The transparent ink may be applied to the modified irregular reflector regions **10** by other printing techniques than silk screening. For example, a photoresist polymer may be applied in buildup form.

The transparent ink produces the same effect as water adhering to ground glass, to reduce irregular reflection from the rugged surface.

In this embodiment, as noted above, the transparent ink is applied to the modified irregular reflector regions **10** by silk screen [*sic*] printing. The surfaces of the transparent ink deposits have traces left by silk screen meshes, thereby defining rugged surfaces with a certain degree of roughness. In addition, the original, rugged surface lies underneath the ink deposits. The portions of the lower surface **8** of the acrylic plate **A** to which the transparent ink has been applied, therefore, cause irregular reflection in an appropriate degree, instead of eliminating the irregular reflection altogether. Thus, these portions provide the modified irregular reflector regions **10**.

The portions of the rugged surface remaining in the ship-shape patterns, as they are, act as the irregular reflector regions **9**.

The quantity of irregular reflection from the modified irregular reflector regions **10** is adjustable by varying the degree of roughness of the transparent ink surfaces or by mixing an irregularly reflecting additive into the transparent ink.

In the passage above, there is no mention of a light scattering agent, and the technology of Matsumoto instead uses surface roughness to modulate the light properties.

Also, in Nagakubo the dot pattern of white material diffuses light (or irregularly reflects or scatters light). In Masumoto, the transparent ink defines a modified irregular reflector region. As a result, the transparent ink planarizes the top surface of the diffusing plane so that the diffusing plane in the modified irregular reflector region cannot reflect light irregularly. Therefore, the transparent ink prevents the diffusing plane from diffusing light. As a result, the utilization of Nagakubo and Matsumoto posited by the Examiner changes the principle of operation and makes these references unusable for their intended purpose.

If the proposed modification or combination of the prior art would change the principle of

operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Therefore, the incorporation of newly cited Matsumoto into the previous rejections still fails to disclose or suggest using "a printing portion made of colorless ink containing a light scattering agent," as is set forth in independent claims 1, 3, 11, and 12 of the present invention.

Additionally, the Examiner has used features such as patterning or surface crenellations in the cited art references, and equated these features with light scattering material. However, these features are technically distinct from light scattering material.

For example, claim 21 of the present invention recites a printing portion that can not only contain light scattering material, but also have convex and concave surface technology.

As a result, one of ordinary skill in the art would not be motivated by any combination of the cited art references to produce independent claims 1, 3, 11, and 12 of the present invention. A *prima facie* case of obviousness has not been made. Claims depending upon these independent claims are patentable for at least the above reasons.

These rejections are overcome and withdrawal thereof is respectfully requested.

Foreign Priority

The Examiner has acknowledged foreign priority most recently in the Office Action mailed April 5, 2006.

The Drawings

The Examiner is respectfully requested to indicate whether the drawing figures are acceptable in the next official action.

Conclusion

The Examiner's rejections have been rendered moot, obviated or overcome. No issues remain. It is believed that a complete response has been made to the Office Action. The Examiner is accordingly respectfully requested to allow the application.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert E. Goozner, Ph.D. (Reg. No. 42,593) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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